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**N**UCLEAR TEST BAN

by

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## NUCLEAR TEST BAN

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ONE QUESTION which may be taken up at a summit conference this summer—a question perhaps more likely than other agenda items to be put on the way to settlement by the heads of government—is conclusion of a treaty to ban testing of nuclear weapons. Representatives of the United States, Great Britain and the Soviet Union have been trying to hammer out such an accord at Geneva since the end of last October and have made limited progress on a treaty draft. Although key issues remain in dispute, the feeling persists that this is one area in which a little high-level discussion now may clear the way to a resolution of East-West differences.

U.N. Secretary General Dag Hammarskjold on April 2 foresaw the possibility that the heads of government might take a hand in efforts to bring the protracted negotiations on nuclear testing to a successful conclusion. Soviet Premier Nikita S. Khrushchev had said the day before that the U.S.S.R. would "continue to strive for an agreement on the discontinuance of atomic and hydrogen weapon tests," and he had added that the present year might "mark the departure from the road of the arms race." Many observers think the Russians earnestly desire some relief from the burden of armaments and would welcome a nuclear test ban as a first step toward breaking the long deadlock on comprehensive measures of arms limitation.

Thirteen years have passed since Bernard M. Baruch, speaking for the United States, told his fellow delegates at the opening meeting of the U.N. Atomic Energy Commission on June 14, 1946, that "We are here to make a choice between the quick and the dead." The attempt then initiated to subject atomic energy to the control of a special international authority ran into insurmountable difficulties and was finally abandoned. Further effort to achieve control of nuclear weapons was merged in 1952 with the endeavor to work out a general disarmament agreement. A year ago the subject of nuclear energy control—or rather

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the single phase of a test ban—was singled out again for separate negotiation. Meanwhile, since 1946, the atom bomb has been joined by the vastly more destructive hydrogen bomb and the threat of damaging or deadly radiation has risen over the world.

### SHIFT FROM PACKAGE TO PIECemeAL ARMS CONTROL

After two years of deadlock, the U.N. Disarmament Commission in 1954 set up a five-power subcommittee to seek fresh approaches to the twin tasks of limiting nuclear and conventional arms. In subsequent negotiating sessions both the Western powers and the Soviet Union submitted new proposals. One feature of a comprehensive plan put forward by the Russians on May 10, 1955, was a call for ending of atomic and hydrogen weapons tests the following year. However, the idea did not then appeal to the West. Nor was a basis for common agreement afforded by other proposals from East and West, including the "open-skies" inspection plan advanced by President Eisenhower at the Geneva summit meeting in July 1955. The Soviet Union's summary rejection of Western proposals submitted on Aug. 29, 1957, brought the subcommittee's work to a halt. The Disarmament Commission, though reorganized that autumn in an attempt to meet Moscow's wishes, was forced into inactivity by a Russian boycott.<sup>1</sup>

At the subcommittee's meetings in London in 1957 the United States had stuck to the position that disarmament must be dealt with as a single problem. The new Western program presented in August by Harold E. Stassen, then Special Adviser to the President for Disarmament, contained nine points which were to be indivisible. The first three points covered a nuclear test ban, a ban on production of nuclear weapons, and a provision for reduction of stockpiles. The United States was then still insisting that an agreement to ban nuclear testing could not be entered into without a simultaneous agreement to stop producing and stockpiling nuclear weapons. The reasoning underlying this stand emphasized the dangers of a continued race to produce and store nuclear weapons, while discounting the dangers of radioactive fallout from testing of nuclear devices.

Rising popular pressure for stopping nuclear tests, combined with the stalemate in negotiations for package dis-

<sup>1</sup> See "Arms Control: 1958," *E.R.R.*, 1958 Vol. II, pp. 829-840 and pp. 842-848.

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armament plans, helped to incline the American government toward consideration of an independent agreement on testing. Stassen recommended in February 1958 that the West turn its efforts in that direction, for he had concluded that to persist in trying to tie a test ban "into those other parts" of a general arms limitation scheme would not produce agreement "within any conceivable range of years." Proposals for a separate test ban gained the support of Sen. Clinton P. Anderson (D-N.M.), chairman of the congressional Joint Committee on Atomic Energy, and of Sen. Hubert H. Humphrey (D-Minn.), chairman of the Senate Foreign Relations Committee's Disarmament subcommittee.

At hearings before the Disarmament subcommittee in the spring of 1958, spokesmen for the Atomic Energy Commission adhered to the view that a nuclear test ban should not be separated from other nuclear disarmament proposals. However, other witnesses, including Hans Bethe, special nuclear adviser on the President's Science Advisory Committee, voiced the opinion that test suspension need not be tied to a cut-off of nuclear weapons production.<sup>2</sup> The subcommittee in its final report, Oct. 13, 1958, concluded that "It would be in the interests of the over-all objectives of United States policy to seek an international agreement on the suspension of nuclear tests, provided that effective . . . control can be installed." By that time, arrangements had been completed to seek just such an agreement.

### CONCERN ABOUT HAZARDS OF RADIOACTIVE FALLOUT

The dangers of fallout, which have given continued popular backing to attempts to obtain an agreed ban on nuclear testing, were brought dramatically to public attention in March 1954, when explosion of a hydrogen bomb over the Pacific showered radioactive coral ash on the Japanese fishing boat, *Lucky Dragon*. In the ensuing five years, worldwide concern over the effects on human beings of fallout from nuclear explosions has added a new dimension to demands for disarmament and prevention of nuclear war.<sup>3</sup>

<sup>2</sup> "Two physicists, Hans Bethe and Dr. I. I. Rabi of Columbia, . . . have concluded . . . that a cut-off in the production of nuclear weapons and a reduction in stockpiles is no longer a practicable goal. Stockpiles can be hidden too easily. . . . For them, the unique appeal of a test suspension derives from a belief that of all the desired steps toward disarmament, it would be the surest and least onerous to monitor"—Charles J. V. Murphy, "Nuclear Inspection: A Near Miss," *Fortune*, March 1959, p. 155.

<sup>3</sup> See "Radiation Hazards," *E.R.R.*, 1958 Vol. I, pp. 101-119.

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Widespread fallout from unrestricted use of nuclear weapons in war, particularly so-called "dirty" weapons, would unquestionably do untold harm to those who survived the holocaust. The extent of radiation hazards from testing of nuclear devices in remote areas is another question—a highly controversial question. The fear is that radioactive fission products, carried great distances through the atmosphere by wind currents and precipitated in populated places, may cause grave bodily damage and have serious genetic effects on future generations. The most dangerous radioactive substances that may be taken into the body, usually in food, are thought to be cesium-137 and strontium-90.

Cesium-137 and strontium-90 have very "dangerous" half-lives—about 30 years—which is long enough so that decay is negligible between the explosion and contact with man. . . . Cesium-137 is deposited more or less uniformly throughout the body; strontium-90 is concentrated in the bones. . . . The bones are quite sensitive to radiation, and an over-dosage can cause bone cancer and interfere with the production of blood cells that goes on in the marrow. . . . Cesium-137, after being absorbed, is retained in the body less than six months. . . . Strontium-90 is retained for many years. On the other hand, cesium-137 can cause . . . damage to the reproductive cells.<sup>4</sup>

A recent Defense Department report found radiation hazards from weapons testing to be greater than previously supposed. The report, summarized in a letter from Maj. Gen. Herbert B. Loper, Special Atomic Energy Assistant to the Secretary of Defense, to Sen. Anderson and made public on March 21, markedly altered the picture of fallout presented by earlier Atomic Energy Commission analyses. The A.E.C. had expressed belief that it would take seven years for one-half of the debris from nuclear tests to fall to earth, and that it would be distributed evenly over the earth's surface. The Loper report reduced the estimated time to two years and said that "The concentration of strontium-90 on the surface of the earth is greater in the United States than in any other area of the world."

Dr. Russell H. Morgan, head of the National Advisory Committee on Radiation, pointed out in an article in the *Baltimore Sun*, May 7, that mortality from automobile accidents in the United States was currently a hundred times greater than would be the estimated mortality from fall-

<sup>4</sup> Edward Teller and Albert L. Latter, *Our Nuclear Future* (1958), pp. 106-108. The term "half-life" refers to the time required for one-half of a large number of identical radioactive nuclei to disintegrate.

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out "if present levels of radioactive contamination of the atmosphere from weapons testing were to continue indefinitely." Dr. Morgan observed, however, that contamination had been "rising tenfold every three to four years until weapons testing was stopped a year ago." He concluded, therefore, that "A reinstatement of an accelerating program . . . in which the detonations are carried out in the free atmosphere will quickly magnify the presently minor fallout problem to one of substantial proportions."

The Atomic Energy Commission disclosed on May 5 that American and British tests have produced almost three times as much radioactive debris as Soviet tests. The two Western nuclear powers have been responsible for the explosion since 1945 of atomic and hydrogen bombs with a combined fission yield of 65,900 kilotons, as against a fission yield of only 25,560 kilotons from Russian bomb explosions.<sup>5</sup> In tests in 1957 and 1958, however, the fission yield attributable to the Russians amounted to 21,000 kilotons, that attributable to the Western powers to 19,000 kilotons.

#### **PRESSURE FOR TEST BAN; "SUSPENSIONS" IN 1958**

The menace of fallout, made the more disturbing by lack of exact knowledge as to its extent, had taken on awesome proportions in the public mind long before disarmament negotiations were stalemated in 1957. Suspension of nuclear testing was urged by Prime Minister Jawaharlal Nehru of India in the spring of 1954. British Laborites advocated suspension of testing early in 1955. In the United States the question became an issue in the 1956 presidential campaign. Adlai E. Stevenson, the Democratic nominee, who had come out in April of that year for suspension of further testing of the hydrogen bomb (though not of smaller nuclear devices), hammered on that theme in speeches before and after the party conventions. Stevenson maintained that this country should take the lead and call on others to follow; if they did not follow, the United States could reconsider.<sup>6</sup> President Eisenhower, on the other hand, opposed unilateral suspension and defended continued nuclear testing.

Pressure for a test ban increased as the prospect for a

<sup>5</sup> A kiloton equals the force of 1,000 tons of TNT. The Hiroshima and Nagasaki bombs had a force of only about 20 kilotons.

<sup>6</sup> Elaborate inspection machinery was not necessary, Stevenson said, because there was no way to conceal H-bomb explosions.

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general disarmament agreement receded. A petition calling for an immediate international agreement to halt tests, signed by 9,000 scientists (including 36 Nobel Prize winners) from 43 countries, was filed with the United Nations in mid-January 1958. Soviet Premier Nikolai A. Bulganin, in a letter a month earlier to President Eisenhower and other heads of government, had renewed Soviet appeals for a test ban, and similar appeals came from elsewhere.

President Eisenhower gave the first indication of a possible shift of administration policy in that regard at a news conference on March 26, 1958; he implied then that the United States might be willing to negotiate a "reliable" agreement for banning of tests without an accompanying ban on weapons production. Only five days later, on March 31, the Soviet Union proclaimed that it was unilaterally halting nuclear weapons tests; urged the United States and Great Britain to do likewise; and said that, if they failed to do so, it would feel free to resume testing.

Planned American and British tests proceeded that spring and summer, but on Aug. 22 the two Western countries proposed a conditional one-year suspension to begin Oct. 31. The Soviet Union resumed testing Sept. 30 with the announced intent of matching the number of American and British tests in the preceding six months. It apparently reached that goal on Nov. 3. At any rate, no tests by any country have been detected since that date, which was three days after the conference to negotiate a test ban opened at Geneva.

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#### **Progress of Geneva Parley On Testing**

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PRESIDENT Eisenhower in January 1958 had asked his principal scientific adviser, James R. Killian, Jr., to arrange for a study of the technical problems involved in enforcing a nuclear test ban. A committee set up for that purpose under Hans Bethe concluded that policing of a test ban would be feasible. Bethe gave it as his opinion that, while absolutely fraud-proof control was not possible, the probability that an illicit explosion would be detected was so great that no country could afford to take the risk of violating a pledge to refrain from testing.

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Acting on this advice, the President on April 28, 1958, proposed to Soviet Premier Khrushchev that the Soviet Union agree to a conference of technicians to determine the practical requirements of a detection and inspection system.<sup>7</sup> A State Department spokesman said later, in explanation of the decision to try to negotiate a test ban: "Weapons requirements and present achievements were balanced as against the Russian requirements and achievements, and . . . against the many . . . political considerations, [and] we felt we had more to gain from an effectively safeguarded test suspension than from a continued competition in weapons development."<sup>8</sup>

The Eisenhower bid to Khrushchev was endorsed by the North Atlantic Council within a week and agreed to by Moscow on May 9. Between then and the opening of the conference on July 1, Moscow and Washington engaged in a sparring match—Moscow seeking to wring a Western commitment to test suspension out of the decision to hold technical talks, and Washington reiterating the point that agreement to discuss the technicalities constituted in itself no obligation to suspend tests. However, the Conference of Experts met on schedule with scientists from four Western countries and four Eastern countries in attendance.<sup>9</sup>

After deliberating for seven weeks, the experts came to the unanimous conclusion that it was "technically feasible to set up . . . a workable and effective control system for the detection of violations of an agreement on the world-wide cessation of nuclear weapons tests." The report agreed to on the eve of the Aug. 21 adjournment of the conference estimated that the controls it proposed would be 90 per cent reliable in detecting nuclear explosions of a force as small as one kiloton under water or in the atmosphere up to a height of 30 miles above the earth, and nuclear explosions of a force of five kilotons or more under the surface of the earth.

The experts recommended a control system consisting of a world-wide network of around 180 monitoring stations equipped with seismographs, spaced about 600 miles apart

<sup>7</sup> A technical conference had been proposed originally by the Western powers at the London disarmament talks in 1957; Eisenhower asked Khrushchev to reconsider that proposal, which the U.S.S.R. had rejected along with the remainder of the Western plan.

<sup>8</sup> Testimony of Philip J. Farley, Special Assistant to the Secretary of State for Disarmament and Atomic Energy, before Senate Disarmament subcommittee, Jan. 28, 1959.

<sup>9</sup> *Western countries:* Canada, France, United Kingdom, United States; *Eastern countries:* Czechoslovakia, Poland, Rumania, Soviet Union.

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in areas subject to earthquakes and about 1,000 miles apart in regions where the problem of differentiating between earthquakes and nuclear explosions would not be likely to arise. In cases where seismograph signals could not be positively identified as caused by an earthquake or by an underground nuclear explosion, it was proposed that teams of radiation experts make ground inspections. Inspection by aircraft equipped with devices to measure radioactive debris was proposed in the case of atmospheric explosions that could not be otherwise positively identified.

The uncommon spectacle of East-West agreement, though put on only by technical experts, produced quick agreement to hold a conference of political representatives of the three nuclear powers. The day after the technical conference adjourned, the United States and Great Britain asked the Soviet Union to join them at Geneva on Oct. 31 in a "Conference on the Discontinuance of Nuclear Weapons Tests." Moscow accepted a week later, and the delegates convened on the appointed day to negotiate a treaty prohibiting tests and setting up a control and inspection system along the lines recommended by the experts.

TEST BAN TREATY NEGOTIATIONS AT GENEVA, 1958-59

The conference, which now has been in session for six and one-half months with time out for Christmas and Easter recesses, has reached agreement so far on 18 sections of a draft treaty. Although it has not yet settled any of the key issues, it has taken up and resolved several controversial points. One of these concerned duration of the test ban. The Soviet Union wanted it to apply without limit of time, while the United States favored an annual renewal conditioned on progress in other areas of disarmament; the West on Jan. 19 accepted the Soviet demand for a permanent ban. The U.S.S.R., which had sought prohibition of all nuclear test explosions, later agreed to a Western proposal of Jan. 30 to allow tests for peaceful purposes, provided the control commission be authorized to observe such explosions or to forbid them if it had reason to believe they were intended to serve a military purpose.

An approved article of the draft treaty provided that representatives of the three nuclear powers and of two countries designated by the Western powers and two designated by the Soviet Union would comprise the control commission. This seven-member group would be given primary

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responsibility for operating the detection system. Agreement up to this point was achieved without difficulty. But serious differences arose when the negotiators at Geneva moved on to such questions as voting procedures for the control commission, staffing of monitoring stations, and availability of inspection teams.

As for voting procedures, the Soviet Union proposed and the United States and United Kingdom opposed a unanimity rule. The Western powers were unwilling to agree because such a rule, giving each member of the commission a right of veto, would enable the U.S.S.R. to bar on-the-spot inspections in the case of suspected Soviet violations of a test ban. Moscow, on the other hand, feared that under a simple majority rule the four non-nuclear powers would divide evenly and the United States and United Kingdom, voting together, would be able to bar inspections in Western territory.

The United States and Great Britain proposed a plan on Jan. 26 for international staffing of the control posts, each of which was expected to be manned by 30 technicians. At the posts on Soviet territory, one-half of the technicians would be American and British nationals and one-half would be drawn from an internationally recruited corps; at posts on American and British territory, one-half of the staff would be Soviet nationals and one-half from the international corps. At posts in other countries, one-third of the technicians would be American or British, one-third Russian, and one-third from the international corps.

Moscow would have none of this plan. It insisted that, with the exception of one or two foreign observers, only Russians should man Russian posts, only Americans the posts in the United States, and only British in the United Kingdom. They finally agreed to four or five foreigners, with some operational responsibilities, at each post but would go no farther. And they opposed stationing of mobile inspection teams at the control posts, ready to proceed at once to the site of a suspected violation.

West and East were so far apart on these matters when the conference recessed for Easter on March 19 that the usefulness of pursuing the negotiations apparently was questioned in some quarters. Ambassador James W. Wadsworth, the U.S. representative, told the Senate Disarma-

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ment subcommittee on March 25 that chances of agreement were very remote. On arriving back in this country four days earlier, he had said that "major decisions have to be made" during the recess.

### **NEW FINDINGS FROM THE HARDTACK AND ARGUS TESTS**

The proceedings at Geneva had been affected at both the beginning and end of the winter session by disclosure of information developed since last summer's conference of technical experts. When the delegates returned from the Christmas recess on Jan. 5, they were given a report of the President's Science Advisory Committee to the effect that new data, based on the autumn "Hardtack" series of underground tests in Nevada, indicated that it would be more difficult than previously believed to identify underground explosions. On March 19, when the Easter recess began, it became known that the United States, in Project Argus last August and September, had set off three atomic explosions 300 miles above the South Atlantic.<sup>10</sup>

A White House statement on the Hardtack tests, Jan. 5, cast doubt on the adequacy of the detection methods recommended by the Geneva technical conference to keep track of underground explosions. But Semyon K. Tsarapkin, Soviet delegate at the test ban conference, greeted the American report as a "step backward" and indicated that he would not discuss its findings. High-altitude tests, such as those carried out in Project Argus, could not be policed under the recommended control system, which assured detection of explosions no higher than 30 miles above the earth.<sup>11</sup>

Experts at the Geneva technical conference had concluded that available seismic devices would identify underground nuclear explosions of a yield as small as five kilotons. The Hardtack tests showed, however, that it might not be possible to distinguish underground nuclear explosions of less than 20 kilotons from earthquakes. The Senate Disarmament subcommittee, at a hearing on Feb. 2, asked Hans Bethe of the President's Science Advisory Committee

<sup>10</sup> These bombs, of a force of one to two kilotons, were fired on Aug. 27, Aug. 30, and Sept. 6 from different points in the South Atlantic roughly midway between the lower reaches of Africa and South America. It has been reported but not confirmed that the United States exploded hydrogen bombs from 25 to 100 miles above Johnston Island in the Pacific last Aug. 1 and 12.

<sup>11</sup> Arthur H. Compton, Nobel Prize-winning physicist, told a Senate subcommittee on April 28 that the Project Argus explosions did not register on existing detection devices.

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whether the new findings meant that a test ban could not be enforced with respect to underground explosions. Bethe replied that the equipment previously recommended by the experts probably would be inadequate but that new equipment might be developed to do the job.

In my opinion, there are . . . a large number of very good methods to improve the system which was devised last summer in Geneva. Any one of these methods has to be agreed to by the Russians. However, the Geneva experts' report . . . contains a very important sentence, namely, it says improvements will undoubtedly be found, and when they are found they shall be incorporated in the system.

A White House Panel on Seismic Improvement, which has been looking into this question, is expected soon to propose an intensive research effort to devise greatly improved detection methods. Scientists attending a meeting of the American Geophysical Union, May 5, listened to descriptions of promising new techniques for detecting underground explosions. One seismologist surmised that a seismograph recently developed in this country could cover the world from only six installations.

The Project Argus tests in outer space affected the prospects of the Geneva negotiations to somewhat greater extent than the Hardtack tests, for the technical conference had made no recommendations for policing explosions more than 30 miles above the earth. Further consultation among the experts might therefore be necessary. But on May 8 the Soviet delegate at Geneva accepted in principle the idea that the three nuclear powers should jointly explore the problem of enforcing a ban on blasts in outer space, presumably by means of earth satellites instrumented to detect radiation.

#### **PROPOSALS TO SPEED UP THE GENEVA NEGOTIATIONS**

During the Easter recess of the Geneva conference, suggestions to limit a test ban initially to under-water, surface, and low-altitude explosions came from several senators and from Atomic Energy Commission Chairman John A. McCone. This step-by-step approach to a complete test ban won prompt approval as administration policy. When the conference reconvened April 13, Ambassador Wadsworth, with British support, proposed a ban confined to nuclear explosions under water and in the earth's atmosphere. Wadsworth explained that such a prohibition would involve only those controls already agreed to by both East and

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West and make unnecessary any immediate provision for the on-site inspections over which there was disagreement with the Russians.

President Eisenhower on the same day dispatched a personal letter to Premier Khrushchev urging acceptance of the step-by-step approach. The President said in conclusion:

If we could agree to such initial implementation of the first—and I might add the most important—phase of a test suspension agreement, our negotiations could continue to explore with new hope the political and technical problems involved in extending the agreement as quickly as possible to cover all nuclear weapons testing. Meanwhile, fear of unrestricted resumption of nuclear weapons testing with attendant additions to levels of radioactivity would be allayed, and we would be gaining practical experience and confidence in the operation of an international control system.

Khrushchev's reply, April 25, insisted that banning explosions in the atmosphere up to only 30 miles, and ignoring underground explosions, would not solve the radioactivity problem or satisfy public opinion. He insisted that it was "quite possible . . . on the basis of your proposals and ours" to reconcile existing differences and to "establish such a control system as would insure the strict enforcement of the agreement." Tsarapkin, the Soviet delegate at Geneva, had said on April 15 that the "gap between our positions is being narrowed day by day."

The Russians saw a means of narrowing the gap in a proposal advanced by British Prime Minister Macmillan during his visit to Moscow last winter. That proposal, referred to by Khrushchev in his letter to Eisenhower, envisioned putting a limit on the number of on-site inspections that might be made annually on the territory of a nuclear power. It was the Russians who put the proposal formally before the conference.

Tsarapkin on April 27 proposed that the three powers seek agreement on the maximum number of inspections to allow on their territories each year, and he indicated that inspections within the agreed number would not be subject to veto. Whether the Soviets would agree to a large enough number of veto-free inspections, and whether inspection teams would be free to go where they chose, were unanswered questions. State Department officials noted that Moscow had shown no sign of willingness to relinquish

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the veto on operation of other parts of the proposed control machinery. Sen. Humphrey said on May 7 that it would be impossible to set realistic limits now on the number of inspections; he suggested that no limits be fixed until control posts had been in operation for a year.<sup>12</sup>

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### **Ban On Tests and Ban On Weapons Use**

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AGITATION for a ban on testing of nuclear weapons has been strengthened by growth of public concern over the dangers of radioactive fallout. Yet much of the popular opposition to testing is total; it makes no exceptions for underground or other tests that will add little or not at all to the accumulation of fallout. Many of those who oppose testing of nuclear weapons, moreover, are equally opposed to manufacture or use of nuclear weapons.

Henry A. Kissinger of the Harvard Center for International Affairs cautioned last autumn that the free world should have "no illusions about the implications of a complete ban on nuclear tests." He said: "If a cessation of nuclear testing is a 'first step' to anything, it is to an increased campaign to outlaw nuclear weapons altogether. If these weapons are too dangerous to test, the argument will go, they are surely too terrible to use."<sup>13</sup>

The Soviet Union has been one of the most persistent campaigners for "banning the bomb." It called for outlawry of nuclear weapons before it had any such weapons itself and has continued periodically to demand cessation of testing, production, or use of nuclear armaments. But it has wanted to impose a ban simply by international declaration without controls, or it has insisted on retaining a veto on operation of an inspection system. The Western powers, meanwhile, have adamantly refused to enter into any disarmament agreement that does not contain adequate enforcement provisions.

Great Britain's Labor Party, through its national committee, has gone on record for unilateral suspension of

<sup>12</sup> The White House Panel on Seismic Improvement was reported, May 5, to believe that no limit on the annual number of inspections should be set at present.

<sup>13</sup> Henry A. Kissinger, "Nuclear Testing and the Problem of Peace," *Foreign Affairs*, October 1958, p. 8.

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nuclear testing. It said in a recent campaign pamphlet, entitled *The Future Labor Offers You*, that:

The Labor government's first contribution to disarmament will be a decision to suspend British nuclear tests at once, whatever other powers may decide. . . . By giving this lead Britain would create a . . . better climate for disarmament. . . . Ending nuclear tests—and with them the danger of poisoning mankind by radiation—will be only a beginning.

Whatever this statement may imply about banning of nuclear weapons, the Labor Party's willingness to halt testing unilaterally does not imply a willingness to outlaw the manufacture or use of the weapons themselves without international agreement and adequate safeguards. The annual conference of the party for two years in succession, 1957 and 1958, has turned down by overwhelming majorities a resolution to commit the next Labor government to unilateral disarmament. Both the party's leader, Hugh Gaitskell, who would be Prime Minister in a Labor government, and the leftist prospective Foreign Secretary, Aneurin Bevan, declined at the conference last October to promise a unilateral British ban on manufacture of nuclear weapons.

**PLACE OF NUCLEAR WEAPONS IN DEFENSE OF WEST**

The United States, no more than Great Britain, is in position to give up nuclear weapons in the absence of a far-reaching disarmament agreement that would cover troop strength and other matters as well as atomic and hydrogen bombs and missiles. The free world is now heavily dependent on nuclear weapons to balance Soviet Russia's, if not also Communist China's, preponderance of manpower. Gen. Nathan F. Twining, chairman of the Joint Chiefs of Staff, said on Oct. 21, 1958:

Our national policy calls for the use of nuclear weapons in any case where such use would be advantageous to us. . . . We will fight an enemy, if we are forced into a war, on our terms and not his. This means we will not attempt to meet his masses of soldiers with masses of our own. We will meet him with superior weapons, equipment, techniques, and tactics.

It was because of the Soviet Union's superior military manpower resources that President Eisenhower said at his news conference, March 11, that "We are certainly not going to fight a ground war in Europe." But if the Berlin crisis came to a showdown, the President conceded, use of atomic force might be necessary to defend the Western

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position. The reduced ability of the United States to fight limited war has subjected the country's military policy to criticism,<sup>14</sup> because it appears to open the door to situations in which all-out atomic war will be the only alternative to appeasement or submission. If that is the case, safe passage through a major crisis may involve keeping a perilous balance between readiness to use nuclear power and reluctance to precipitate the horrors of nuclear warfare.

#### **OPPOSITION TO TEST BAN; REASONS FOR MORE TESTING**

Dependence on nuclear weapons for national security has made the Defense Department and the Atomic Energy Commission hesitant supporters or outright opponents of a complete ban on nuclear tests. When the ground was being prepared a year ago for the Geneva conference, A.E.C. officials, including the then chairman, Lewis L. Strauss, testified before the Senate Disarmament subcommittee that prohibition of testing would leave the United States with an obsolete weapons system and would prevent further development of tactical nuclear weapons, anti-missile missiles, and "clean" nuclear weapons.

Adm. Arleigh A. Burke, Chief of Naval Operations, told the same subcommittee last January that "A test ban would freeze certain important planned developments." In that connection Burke mentioned that "We would like to have a Polaris warhead with twice or more the present yield, which we can expect if tests proceed." Gen. Maxwell D. Taylor, Army Chief of Staff, declared that it was "certain that our program for the development of nuclear weapons will suffer from the banning of tests."

When Thomas E. Murray, a member of the Atomic Energy Commission for seven years, left the agency two years ago, he said that the United States should not, "even for a time, stop testing weapons in the kiloton range." Although approving suspension of tests of large hydrogen bombs, Murray declared in a report to the congressional Joint Atomic Energy Committee, June 27, 1957, that to ban testing of small weapons would be "reckless in the extreme . . . indefensible on any grounds . . . [and] betray an appalling heedlessness of the basic and imperative security interests of the United States." Stressing the importance of small as well as large nuclear weapons the commissioner called for a balanced stockpile that will "give us

<sup>14</sup> See "Limited War," *E.R.R.*, 1958 Vol. II, pp. 551-568.

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appropriate weapons strength both to support the rigid strategy of deterrence and also to give substance to a flexible doctrine of limited war."

Atomic Energy Commissioner Willard F. Libby said in a public address last March 13 that "The new technique of testing underground can further greatly reduce world-wide fallout." He added that "It ought to be possible to obtain most of the results on weapons design with this technique." Libby told a subcommittee of the Joint Atomic Energy Committee, May 8, that studies indicated that there would be "very low fallout" from tests in outer space; only one-tenth of one per cent of the radioactive material from an explosion 60,000 miles above the earth would ever reach the ground.

Following this testimony, subcommittee members observed that confining tests to underground sites and outer space would have two advantages: It would (1) permit continued development of nuclear weapons while (2) denting the Soviet "propaganda weapon" of atomic fallout. A limitation of this kind is what the United States recently suggested at Geneva as the first step in the proposed step-by-step approach to an eventual all-encompassing ban on nuclear testing.







